National Institute of Environmental Health Sciences

Dirofilarial infections in Europe

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Abstract:

Nematodes of the genus Dirofilaria are currently considered emerging agents of parasitic zoonoses in Europe. Climatic changes and an increase in the movement of reservoirs (mostly infected dogs) have caused an increase in the geographical range of these parasites from the traditionally endemic/hyperendemic southern regions, and the risk for human infection has increased. In the last several years, forecast models have predicted that current summer temperatures are sufficient to facilitate extrinsic incubation of Dirofilaria in many areas of Europe. The global warming projected by the Intergovernmental Panel on Climate Change suggests that warm summers suitable for Dirofilaria transmission in Europe will be the rule in the future decades, and if the actual trend of temperature increase continues, filarial infection should spread into previously infection-free areas. Dirofilaria repens is currently the filarial species that is most commonly reported as spreading from southern to northern areas. This article reviews the zoonotic aspects, effects of climate, and other global drivers on Dirofilaria infections in Europe and the possible implications on the transmission and control of these mosquito-borne nematodes.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Dirofilariasis

Model/Methodology:

type of model used or methodology development is a focus of resource

Methodology

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified